

JINNAH SINDH MEDICAL UNIVERSITY**STUDY GUIDE**

PROGRAM	MBBS
COURSE TITLE	SURGERY AND ALLIED SPECIALTIES
ACADEMIC YEAR	FINAL YEAR MBBS 2024
INTRODUCTION	<p>Surgery is a branch of medicine that is concerned with the treatment of injuries, diseases, and other disorders by manual and instrumental means. Surgery involves the management of acute injuries and illnesses as differentiated from chronic, slowly progressing diseases, except when patients with the latter type of disease must be operated upon.</p> <p>"General Surgery" is a discipline of surgery having a central core of knowledge embracing Anatomy, Physiology, Metabolism, Immunology, Nutrition, Pathology, wound healing, shock and resuscitation, intensive care, and neoplasia, which are common to all surgical specialties.</p> <p>A general surgeon has specialized knowledge and experience related to the diagnosis, preoperative, operative, and postoperative management, including the management of complications.</p>
RATIONALE	<p>For general practitioners, to provide effective health care, it is imperative that learners be given adequate opportunities in managing adult patients with common surgery-related conditions so that they are productive physicians, including the skill to provide basic care in cases of trauma. No MBBS program can be complete without satisfactorily gaining competence in the management of such conditions.</p>

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OUTCOMES	<p>By the end of the final year MBBS, students will be able to</p> <ul style="list-style-type: none"> • Demonstrate competence in basic clinical and procedural skills • Demonstrate clinical reasoning in surgical patient management • Justify management plans for common surgical conditions in Emergency, in- and out-patient situations • Appropriately and promptly refer patients to specialists • Consistently demonstrate professional & ethical behavior along with communication skills with all stakeholders
DEPARTMENTS INVOLVED	<ol style="list-style-type: none"> 1. Anesthesia and Critical Care 2. General Surgery 3. Neurosurgery 4. Orthopedic Surgery and Trauma 5. Paediatric Surgery 6. Plastic Surgery 7. Urology 8. Vascular Surgery
COURSE OBJECTIVES	<p>By the end of the course, the students will be able to:</p>
<u>LECTURES</u> ANESTHESIA AND CRITICAL CARE	<p>Anaesthesia:</p> <ul style="list-style-type: none"> • List the key principles of General Anesthesia • List the preparation steps for general anesthesia • Describe the classification , pharmacokinetics, indications, contraindications of: <ul style="list-style-type: none"> ✓ inhalational anesthetic agents ✓ intravenous anesthetic agents ✓ local anesthetic agents ✓ regional anesthesia (spinal, epidural, nerve blocks) • Describe the principles of muscle relaxation and artificial ventilation during general anesthesia

- Explain the importance of monitoring and care of patients during general anesthesia
- Describe the process of recovery from anesthesia
- Explain the peri-operative management plan for patients undergoing elective surgery
- Describe the principles of acute and chronic pain management
- Describe the different types of ICU monitoring and their indications.

Pre-operative assessment of the surgical patient:

- Describe the principles and protocol of assessing patients health status before various surgeries
- explain scoring systems used to identify high-risk patients (POSSUM and RCRI)
- Describe the process of evaluating patient outcomes using ACS-NSQIP

Post-operative Care:

- Explain the process of post-operative wound care
- Describe the process of (a) monitoring vital signs and other parameters to detect postoperative complications early and (b) suitable relevant interventions
- Describe the etiology and outlines of management of common postoperative complications (such as hemorrhage, wound infection, fever, hypothermia, shivering, deep venous thrombosis, pulmonary embolism, wound dehiscence, paralytic ileus, nausea, and vomiting)

GENERAL SURGERY	<p>Minimally invasive surgery:</p> <ul style="list-style-type: none"> • Explain the principles of laparoscopic surgery. • List the advantages and disadvantages of laparoscopic/ minimally invasive surgery (MIS). • Discuss the safety issues and indications for laparoscopic/ MIS • Outline the principles of postoperative care for laparoscopic/ MIS. <p>Salivary Glands:</p> <ul style="list-style-type: none"> • Describe the Pathology, classification, Clinical features, investigations, and treatment for the common benign and malignant diseases of salivary glands (Parotid, sub-mandibular and sublingual glands) <p>Oral cavity malignancies:</p> <ul style="list-style-type: none"> • List the types of oral cavity malignancies. • Diagnose common oral cavity malignancies on the basis of given risk factors, clinical features and investigation findings • discuss the prognosis of each type of oral cavity malignancies • Describe outline of management plan for oral cavity malignancies. • Discuss the effectiveness and potential complications of different treatments for oral cavity malignancies, including surgery, radiation, chemotherapy, and targeted therapy. <p>Malignant conditions of the thyroid:</p> <ul style="list-style-type: none"> • Describe the various types of malignant conditions affecting the thyroid gland. • Classify the malignant conditions of the thyroid gland according to histopathological features, including papillary,
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follicular, medullary, and anaplastic thyroid cancers.

- Analyze the clinical features of thyroid malignancies, including signs and symptoms, risk factors, and prognosis.
- Discuss the pros and cons of various diagnostic approaches and imaging modalities available to detect thyroid malignancies, such as fine-needle aspiration cytology, ultrasound, and radioactive iodine scans.
- Explain a management plan for thyroid malignancies, including surgical options, radiation therapy, and chemotherapy.

Parathyroid Gland:

- Based on patient information provided, develop a differential diagnosis for hypercalcemia, taking into account the possible role of parathyroid dysfunction
- Differentiate between primary hyperparathyroidism and secondary hyperparathyroidism based on laboratory and imaging findings.
- List the various investigations available for evaluating parathyroid gland function.
- Analyze the role of imaging modalities in detecting parathyroid adenomas, including ultrasound, sestamibi scan, CT scan, and MRI.
- Explain management plan for Parathyroid carcinoma

ii. Multiple Endocrine Neoplasia Syndrome:

- Explain the etiology and genetic inheritance patterns of Multiple Endocrine Neoplasia (MEN) syndromes.
- Describe the clinical features and diagnostic criteria for MEN syndrome

- Explain the appropriate management strategies for MEN syndrome, including genetic counseling, screening, and surgical options.

Adrenal Medulla:

- Diagnose benign conditions affecting the adrenal medulla on the basis of clinical features and laboratory investigation findings
- Develop a differential diagnosis for hypertension in patients with suspected adrenal medullary tumors.
- Explain the role of imaging modalities, including CT scan, MRI, and MetalodoBenzylGuanidine (MIBG) scan, in diagnosing adrenal medullary tumors.
- Describe the principles of management of incidentalomas.
- Develop a management plan for primary hyperaldosteronism (Conn's syndrome) based on the patient's clinical features, laboratory results, and imaging findings.
- Analyze the various treatment options available for Cushing's syndrome.
- Differentiate between the potential complications of adrenocortical carcinoma and congenital adrenal hyperplasia.

Thorax:

- Identify common signs and symptoms of malignant thoracic tumors.
- List the investigations to diagnose and stage thoracic tumors.
- Discuss the prognostic factors.
- Explain the various treatment options available for thoracic

tumors.

- Explain management plan for patients with thoracic tumors, including pain management and symptom control.

Breast

- Describe the Surgical anatomy of the breast
- Classify Pathophysiology of breast disorders
- Classify Benign Breast Disease
- Enumerate the Diagnostic Investigations of Benign Breast Diseases
- Diagnose Benign breast disease
- Describe management plan for Benign Breast Disease and its complication
- Explain the staging of Ca breast
- Diagnose Ca Breast based on signs and symptoms and investigation
- Explain a management plan for Ca breast and its complications applying basic concepts of anatomy and lymphatic drainage of the area.

Esophagus:

- Classify esophageal motility disorders
- Classify para-oesophageal hernias
- Describe the clinical presentation of different motility disorders
- List the investigations used for the diagnosis of esophageal disorders.
- Explain the indications and contraindications for different diagnostic tests.
- Explain the management options for different esophageal motility disorders.

- Describe the clinical presentation and risk factors for different premalignant conditions, and evaluate the screening and surveillance strategies for individuals at risk of esophageal malignancy.
- Describe the clinical presentation and diagnostic approach to para-oesophageal hernias.
- Analyze the management options for different types of para-oesophageal hernias.
- Describe the clinical features and diagnostic approach to esophageal malignancies,
- Discuss the treatment options for different esophageal malignancies

Stomach and duodenum:

- Classify Gastritis
- Differentiate among various gastric and duodenal ulcers based on their etiology, risk factors, clinical presentations and investigation findings
- Describe the clinical presentation and diagnostic approach to different types of Gastritis
- Explain the treatment options for different types of gastritis
- Discuss the role of H Pylori as one of the etiological factors for Peptic Ulcer disease
- Discuss the differential diagnosis of epigastric pain
- Diagnose Peptic Ulcer disease based on clinical presentation and investigation findings
- Justify the diagnostic approach and treatment options for peptic ulcer disease
- Explain the likely complications of gastric and duodenal ulcers

- Discuss the clinical presentations, etiologies, risk factors, investigations, differential diagnoses and treatment plans for common Gastric tumors (benign and malignant)
- Describe the etiology, clinical presentation, investigations and treatment approach for Hematemesis and Melena
- Discuss the clinical presentations, etiologies, risk factors, investigations, differential diagnoses and treatment plans for common duodenal tumors (benign and malignant)
- Discuss the clinical presentations, etiologies, risk factors, investigations, differential diagnoses and treatment plans for Zollinger-Ellison Syndrome

Pancreas:

- Investigate the pancreas through interpreting laboratory tests, imaging studies, and endoscopic procedures.
- Develop a plan for the assessment and management of acute pancreatitis.
- Evaluate the signs, symptoms, and staging of pancreatic cancer by interpreting diagnostic tests and developing a treatment plan based on the patient's disease stage and prognosis.

Spleen:

- Define the common pathologies associated with the spleen, such as splenomegaly, hypersplenism, splenic abscess, splenic artery aneurysm, splenic infarction, and splenic rupture.
- Explain the principles of splenectomy, including indications, contraindications, surgical approach, potential complications

and postoperative management.

- Evaluate the potential advantages of laparoscopic splenectomy over open splenectomy.
- Discuss the benefits of splenic conservation

Gallbladder and Bile ducts:

- Describe the pathophysiology of gallstones
- Develop a management plan based on the patient's condition, co-morbidities, and preferences
- Describe the etiology, clinical features, investigation findings and treatment plans and complications of portal hypertension
- Formulate a diagnostic and treatment plan for obstructive based on the patient's clinical presentation, laboratory results, and imaging studies.
- Describe the clinical features, and staging of benign and malignant tumors of the Biliary tree
- Develop a treatment plan based on the patient's condition and prognosis for Benign and malignant Biliary tree tumors.

Liver:

- Describe the Pathology, classification, Clinical features & investigations Cystic liver disease
- Describe the Pathology, classification, Clinical features & investigations Liver Abscess
- Discuss the different liver infections/infestations and their associated pathology, classification, clinical features, and investigations.
- Evaluate the pathology, classification, clinical features, investigations, and management of Hydatid disease.

- Differentiate between benign and malignant tumors of the liver based on signs, symptoms, investigations, diagnosis, staging, prognosis, and treatment.

Peritoneum, Omentum, Mesentery & Retro-peritoneum:

- Identify the etiology and clinical features of peritonitis, intra-peritoneal abscess, intra-peritoneal adhesions, omental torsion, mesenteric injury, mesenteric ischemia, mesenteric adenitis, retro-peritoneal abscess, retro-peritoneal tumors.
- Describe the appropriate diagnostic tests for each of these conditions.
- Explain the principles of management for the above-mentioned conditions.

Hernias:

- Describe the gross anatomy of the abdominal wall and inguinal and femoral regions
- Identify key features of various types of abdominal hernias
- Based on patient information, differentiate between inguinal and femoral hernias
- Explain the management of the common types of abdominal hernias

Small intestine

- Differentiate between Ulcerative Colitis and Crohn's disease as types of inflammatory bowel disease, including their etiology, pathology, clinical features, and investigations.
- Describe the pathology, classification, clinical features, and investigations of tuberculosis of the intestine.

- Discuss the pathology, clinical features, and investigations of intestinal diverticula.
- Analyze the pathology, clinical features, and investigations of mesenteric ischemia.
- Explain the pathology, clinical features, investigations, and management of short bowel syndrome.
- Differentiate between benign and malignant tumors of the small intestine based on signs, symptoms, investigations, diagnosis, staging, prognosis, and treatment.

Large intestine:

- Discuss the pathology, clinical features, investigations and treatment plans of :
 - ✓ Diverticular disease of the colon
 - ✓ Ulcerative colitis
 - ✓ Angiodysplasia
 - ✓ Ischemic colitis
 - ✓ Irritable bowel syndrome
- Differentiate between benign and malignant tumors of the large intestine based on signs, symptoms, investigations, diagnosis, staging, prognosis, and treatment.

Appendix:

- Describe the surgical anatomy of Acute Appendicitis.
- Diagnose Acute Appendicitis based on clinical features and , investigation findings
- Discuss the different complications of Acute Appendicitis and their management
- Explain the management of Acute and Chronic Appendicitis.

- Differentiate between benign and malignant tumors of the appendix based on signs, symptoms, investigations, diagnosis, staging, prognosis, and treatment.

Intestinal Obstruction:

- Classify the different types of intestinal obstruction based on etiology
- Correlate the clinical features of intestinal obstruction with underlying pathophysiology
- Differentiate between simple and strangulated obstruction based on clinical features & investigation findings
- Select relevant investigations and treatment options for intestinal obstruction
- Explain the clinical features, pathophysiology and principles of management of paralytic ileus and pseudo-obstruction

Rectum:

- Explain the surgical anatomy of the rectum
- Differentiate among the clinical features of common rectal diseases
- Describe the management of injuries of the rectum
- Explain the clinical features of different types of Rectal Prolapse
- Identify the different types of Proctitis and their management
- Describe the clinical features and management of rectal polyps
- Describe the clinical features, investigations, diagnosis, staging, prognosis, and treatment of benign and malignant rectal tumors

	<p>Anal Canal:</p> <ul style="list-style-type: none"> ● Explain the surgical anatomy of the anal canal ● Identify the indications for proctoscopy and sigmoidoscopy ● Explain the clinical features and management of congenital anomalies of the anal canal ● Describe the clinical features, pathophysiology, and management of Pilonidal sinus disease, Perianal abscess, Anal fissure, perianal fistula, and Hemorrhoids ● Explain the clinical features, investigations, diagnosis, staging, prognosis, and treatment of malignant tumors of the anal canal
NEUROSURGERY	<ul style="list-style-type: none"> ● Classify Cerebro-Vascular diseases ● Discuss the risk factors, clinical features, investigations findings, principles of surgical management for stroke/ Cerebro-Vascular Accidents ● Describe the process of patient assessment and principles of management (including assessment of Glasgow Coma Scale, neuro-imaging, and surgical intervention) of: <ul style="list-style-type: none"> ✓ Head injuries ✓ Brain injuries ✓ Spinal Injuries ● Describe the clinical features, investigations and principles of management of congenital anomalies of the brain and spine, including hydrocephalus and myelomeningocele. ● Describe the clinical features, investigations and principles of management of: <ul style="list-style-type: none"> ✓ Cranial tumors

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	<ul style="list-style-type: none"> ✓ Spinal tumors • Describe the etiology, risk factors, clinical features, investigations and principles of management of Hydrocephalous, Idiopathic intracranial hypertension, NPH • Describe the etiology, risk factors, clinical features, investigations and principles of management of Intra-cerebral hemorrhage: Subarachnoid hemorrhage, AVM, Aneurysm
ORTHOPEDIC SURGERY AND TRAUMA	<p>Principles of Management of Trauma Patients</p> <ul style="list-style-type: none"> • Explain the process of early and systematic assessment of a patient with severe trauma, including primary and secondary surveys • Describe the process of assessment and management of: <ul style="list-style-type: none"> i. Maxillofacial trauma (including assessment of airway, breathing, and circulation, and appropriate referral for further care) ii. Thoracic/ chest trauma (Tension Pneumothorax, Open Pneumothorax, and Hemothorax) iii. Abdominal trauma (evaluation of the abdomen for signs of injury, diagnostic tests, and appropriate surgical interventions) iv. Extremity trauma (assessment of neurovascular status and appropriate immobilization techniques)
PEDIATRIC SURGERY	<ul style="list-style-type: none"> • Discuss an outline of management plan for pediatric trauma • Discuss diagnostic criteria and management plans for: <ul style="list-style-type: none"> ✓ Acute abdominal pain in children (including acute appendicitis) ✓ Acute non-specific abdominal pain

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	<ul style="list-style-type: none">✓ Hydrocele✓ Hypospadias✓ Inguinal hernias✓ Intussusception✓ Midline hernias✓ Necrotizing enterocolitis✓ Testicular torsion✓ Undescended testes <ul style="list-style-type: none">● Discuss diagnostic criteria and management plans for the following congenital malformations:<ul style="list-style-type: none">✓ Anorectal malformations✓ Biliary atresia✓ Congenital diaphragmatic hernia✓ Esophageal atresia✓ Exomphalos✓ Hirschsprung's disease✓ Intestinal atresia
PLASTIC SURGERY	<ul style="list-style-type: none">● Classify burns according to etiology● Diagnose the severity of burns based on clinical features● Develop a management plan for burns patients based on the depth and extent of the burn injury.● Differentiate between the various types of skin grafts, including split-thickness grafts and full-thickness grafts, and develop a surgical plan based on the patient's clinical presentation.● Describe the anatomy and physiology of tissues used in

	reconstructive surgery and evaluate their clinical significance in surgical management
UROLOGY	<p>Kidneys and ureters</p> <ul style="list-style-type: none"> • Describe the embryology, surgical anatomy, and congenital anomalies of kidneys and ureters • Discuss the risk factors, etiology, clinical features, investigations, prevention and management plan for common renal calculi • Discuss the risk factors, etiology, clinical features, investigations, prevention and management plan for urinary tract infections • discuss the etiology, grades, investigations and treatment plans for renal and ureteric trauma • Explain the clinical features, risk factors, investigations and treatment plans for benign tumors of the kidneys and ureters <p>The urinary bladder</p> <ul style="list-style-type: none"> • Describe the surgical anatomy of the urinary bladder. • Explain the etiology, investigations, treatment plan and complications for: <ul style="list-style-type: none"> i. bladder trauma ii. congenital defects of the bladder, including neurogenic bladder and bladder exstrophy • Discuss the etiology, risk factors, preventive measures, clinical features, investigations and urological management of: <ul style="list-style-type: none"> i. Acute and Chronic retention of urine ii. Benign & malignant tumors of the urinary bladder iii. Urinary bladder calculi

iv. Urinary bladder fistulae

v. Urinary incontinence

Prostate and Seminal Vesicles:

- Describe the structure and functions of the Prostate gland and Seminal vesicles
- Explain the contribution of Prostate gland and Seminal vesicles to the development of benign and malignant diseases
- Describe the etiology, pathogenesis, clinical features, investigations and treatment plans for conditions associated with lower urinary tract obstruction
- Explain the etiology, pathogenesis, clinical features, investigations and treatment plans for:
 - i. Benign Prostatic Hyperplasia
 - ii. Prostatitis

Urethra and Penis:

- Diagnose urethral injuries based on clinical features and investigation findings
- Develop a management plan of urethral trauma based on the severity of the injury
- Discuss diagnostic criteria and treatment plans for:
 - ✓ Erectile Dysfunction
 - ✓ Phimosis
 - ✓ Urethral Strictures

Testis and Scrotum:

- Diagnose undescended testis based on history, examination findings and investigation reports
- Discuss the outline of management plan for undescended testes

	<ul style="list-style-type: none"> • Classify testicular injuries • Explain outlines of management plan for testicular injury based on the severity of the injury • Discuss diagnostic criteria and management plans for: <ul style="list-style-type: none"> ✓ Benign Testicular tumors ✓ Epididymal cysts ✓ Epididymo-orchitis ✓ Hydrocele ✓ Spermatocele ✓ Testicular torsion ✓ Varicocele
VASCULAR SURGERY	<p>Arterial disorders</p> <ul style="list-style-type: none"> • Identify the signs, symptoms, and diagnostic tests and treatment plans for acute and chronic arterial limb ischemia • Differentiate among dry, wet, and diabetic gangrene. • Describe the signs, symptoms, diagnostic tests, and treatment options for each type of arterial gangrene. • Describe the risk factors, etiology, clinical features, investigations and outline of management for Dissecting Aorta and Aortic Aneurysms <p>Venous Disorders:</p> <ul style="list-style-type: none"> • Describe the pathophysiology of the veins of the lower limb. • Identify the clinical features of venous hypertension of the leg. • Outline the clinical picture of varicose veins and venous ulcers. • Classify varicose veins • Explain the etiology, pathogenesis, clinical features,

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	<p>investigations and treatment options for varicose veins and venous ulcers</p> <ul style="list-style-type: none"> ● Explain the etiology, risk factors, pathogenesis, clinical presentation, management options and complications of venous thrombo-embolism <p>Lymphatic Disorders:</p> <ul style="list-style-type: none"> ● Differentiate between congenital and acquired lymphatic disorders on the basis of their pathophysiology ● Discuss pathophysiology, diagnostic criteria, management plans and complications for: <ul style="list-style-type: none"> i. Lymphadenopathy ii. Lymphangitis
<p>CLINICAL SKILLS (performing under direct supervision- In skills lab and/ or during ward rotations)</p>	<p><u>GENERAL SURGERY</u></p> <ul style="list-style-type: none"> ● Assess the patient's health status before surgery, including cardiovascular, respiratory, gastrointestinal, genitourinary, neurological, endocrine/metabolic, and musculoskeletal conditions, as well as previous surgeries, family history, and co-morbidities. <p><u>Breast</u></p> <ul style="list-style-type: none"> ● Perform Breast Examination ● Obtain Consent for Mastectomy ● Obtain Consent for Biopsy ● Break the bad news to patients diagnosed with Carcinoma breast <p><u>Hernias:</u></p> <ul style="list-style-type: none"> ● Perform a thorough physical examination for hernias

Anal Canal:

- Perform digital examination of the anal canal

Anesthesia and Critical Care:

- Identify high-risk patients using scoring systems such as POSSUM and RCRI.
- Monitor and evaluate outcomes using ACS NSQIP.
- Assist in pre-operative assessment of patients and select appropriate pre-medication

Post-operative Care:

- Assist in the management of system-specific postoperative complications such as respiratory, cardiac, renal, and central nervous system issues.
- Identify common postoperative complications (in real patients) such as haemorrhage, wound infection, fever, hypothermia, shivering, deep venous thrombosis, pulmonary embolism, wound dehiscence, paralytic ileus, nausea, and vomiting.
- Perform appropriate post-operative wound care to prevent complications and promote healing
- Monitor vital signs and other parameters to detect postoperative complications early and intervene as appropriate

PLASTIC SURGERY

- Assist in the care of burns patients
- Diagnose the degree and severity of burns

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	<p><u>TRAUMA</u></p> <ul style="list-style-type: none"> • Assist in the early and systematic assessment of a patient with severe trauma, including primary and secondary surveys. • Performing splinting of fractures <p><u>PAEDIATRIC SURGERY</u></p> <ul style="list-style-type: none"> • Perform a comprehensive history and physical examination of pediatric patients, including neonates and infants, and interpret the findings to establish a diagnosis.
	<ul style="list-style-type: none"> • Administering oxygen & nebulizers • Blood sampling or venipuncture • Carrying out a urine multi dipstick test • Giving intramuscular and intravenous injections • Measuring capillary blood glucose • Moving and handling, including patients who are frail • Passing N/G tube • Performing General and Systemic Physical Examinations • Performing Male and female Catheterization • Performing Wound care and basic wound closure and dressing • Scrubbing • Setting up and maintaining I/V line • Suturing skills • Wearing protective equipment (donning and doffing)
CLINICAL SKILLS (Observation)	<ul style="list-style-type: none"> • Injecting local anesthetics • Managing Patients in Emergency Room/ Casualty • Performing CPR on real patients • Performing insertion of Central venous line

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	<ul style="list-style-type: none"> • Performing surgeries (elective and emergency)
PROFESSIONAL BEHAVIOR	<ul style="list-style-type: none"> • Maintain personal hygiene at all times, especially after being in contact with patients • Effectively counsel patients regarding options for relevant therapeutic procedures • Demonstrate respect, empathy and care while dealing with patients • Take consent appropriately before all procedures and processes • Communicate with professionally and with respect with patients, their attendants, health care team members, senior physicians and peers • Demonstrate punctuality and regularity in all academic sessions • Demonstrate care, empathy and principles of ethical and professional practice in all the therapeutic procedures while taking care of patient safety issues • Safeguard themselves from potential harm by adhering to prescribed protocols • Consistently demonstrate care for the betterment of the patients • Work effectively as a productive member of the health care team • Perform duties honestly and to their maximum abilities • Demonstrate proactive behavior in fulfilling their responsibilities • Follow institutional policies
INTERNAL ASSESSMENT	<ul style="list-style-type: none"> • Internal assessment will be according to institutional policy. • Internal assessment carries 20% weightage in the final, end-of-year examination

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ANNUAL EXAMINATION	<p>The Theory exam comprises of two sections, Papers I & II. Each paper will have MCQs. There will be OSCE (observed and unobserved) related to papers I & II.</p> <p>Surgery related clinical Topics and skills taught in previous years will be assessed in Final year MBBS professional examination as well.</p> <p>Students are strongly advised to thoroughly read the policy on Academic Progression in Undergraduate Programs present on JSMU website.</p>
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